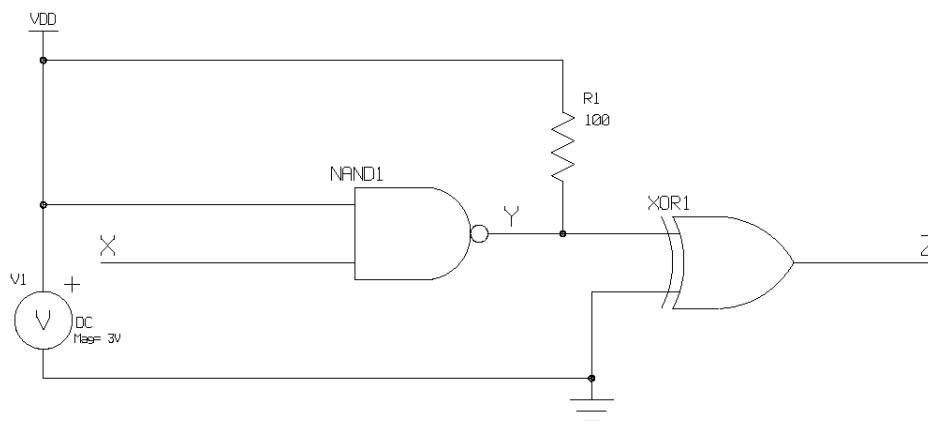


ECE 375
Fall 2007
HW1
due Sept 10, 2007

1. Capture the electrical requirements (functional) for the control logic for the Pepsi vending machine in the ECE building.
2. Text problem 3.13
3. Text problem 3.16
4. Text problem 3.27
5. Text problem 3.26
6. Text problem 3.29
7. The circuit shown below NAND gate is a SN74LVC1G38 and the XOR is a SN74AHC1G86 with the NAND powered by 3V and the XOR powered by 2V:



- a) Plot the voltage of nodes Y and Z when X is a clock signal with voltage levels 0 V for a zero and 2.5V for a high.
- b) Calculate the noise margins at Y and Z
- c) Repeat a and b with NAND gate powered by 3V and XOR powered by 5.5V